

REMARKS

Claims 1-6, 8, and 10-17 are pending in the application. Claims 1-6, 8, 10-12, 14 and 17 stand rejected. Claims 13 and 15 are allowed.

With regard to the objection of claim 1 and the informality of "(13, 19)" included in the claim, Applicants have corrected the typographical error and amended the claim to include the correct numerical reference of "(18, 19)" and thereby have overcome the stated objection.

By the foregoing amendments, Applicants have incorporated dependent claim 11 into independent claim 1 and thus have cancelled claim 11. The Applicants respectfully request that these amendments be entered because they do not present new issues for consideration, they only present issues for reconsideration. Further, the amendments place the case in a condition for allowance or, if necessary, a better condition for appeal.

With regard to the rejection of the claims under 35 U.S.C. §102 in view of Griffith '926, Applicants submit that claim 1 and all of the claims which depend therefrom (claims 2, 3, 4, 6, 8, 10, 12, 14 and 17) are novel and non-obvious in view of Griffith because the present claims and the prior art substantially differ. The presently claimed structure of Applicants' differential drive provides numerous advantages over that of Griffith. For example, because the outer bearing races of the rolling contact bearings have an inner diameter greater than the outer diameter of the outer joint parts, the sideshaft gears and the outer joint parts of the pre-assembled modules can be integrally connected to each other such as by welding. After connecting the sideshaft gear with the respective outer joint part, the outer race of the rolling contact bearing can be slipped over the outer joint part. This structure also permits an axial adjustment of the sideshaft gears on the differential carrier. The pre-assembled modules with the claimed diameter relationships, result in an easily assembled differential drive having a very compact design and relatively few parts as compared to prior art arrangements. Such advantages are noted in paragraphs [0005] and [0020] of the specification as originally filed.

The Griffith reference discloses something completely different. In particular, the Griffith reference discloses a differential drive wherein the side gears 31 are connected to the coupling sleeve 35 by means of a central stud 41. Critically, the coupling sleeve 35 is one element of a Hook's type universal joint. A Hook's type universal joint is substantially different from Applicants' claimed outer joint part of a constant velocity joint, in that the input and the output of a Hook's joint cannot rotate with constant speed. Thus, the presently claimed differential drive is novel in view of Griffith because Griffith fails to disclose Applicants' claimed constant velocity joint. Further, Applicants' constant velocity joint is advantageous in that it has a more compact design as compared to a Hook's joint, particularly in the axial direction, and permits constant speed transmission between the inner joint part and the outer joint which, for any angular operating position, the device of Griffith does not provide.

Furthermore, a Hook's joint does not have an outer joint part. Rather, Hook's joints comprise a first yoke and a second yoke which are connected by means of a pinion cross. Three Hook's joints are visible in Figure 1 of the Griffith '926 reference: one on each side of the differential and a third Hook's joint in connecting relation to the wheel 1. For each of the universal joints in Griffith, one yoke can be seen in side view and the other can be seen in top view. Each yoke has its greatest diameter at its outer most position, i.e., in the plane of the pinion cross.

A closer examination of the Griffith '926 reference reveals that it is substantially different from Applicants' claimed differential drive and lacks several of Applicants' claimed features besides the constant velocity joint just mentioned. Unfortunately, the cross-sectional view of the differential shown in Figure 2 is incomplete with respect to the shape of the coupling sleeve 35 as it extends further away from the differential. Nevertheless, Figure 1 of Griffith reveals some characteristics of the coupling sleeve 35 which can be implied in Figure 2. As an initial matter, however, the term "sleeve 35" indicates that the yoke connected to the sleeve has a greatest diameter. This is supported in the diagram of Figure 1 wherein the universal joint 36 is shown with the sleeve and yoke. From the teaching of Figure 1 of Griffith, and given the fact that each universal joint, i.e., yoke, has its greatest diameter in the plane comprising the pinion

cross, it follows that the greater outer diameter of the universal joint is greater than the inner diameter of the outer bearing race of the rolling contact bearing. This is the opposite relation to Applicants' claimed differential drive.

The diameter relationships in Griffith have been highlighted by Applicants in the attached Exhibit A wherein the diameter D_{uj} represents the outer diameter of the universal joint, and the diameter d_{br} represents the inner diameter of the bearing race of the rolling bearing. It is clear from Figure 2 of Griffith that the sleeve 35 has not reached its greatest diameter at the point where the sectional view ends and, thus, Applicants have supplied the likely sectional view of the universal joint at the left-hand side of Figure 2. This likely sectional view is derived from the fact that the sleeve is part of one element (yoke) of the universal joint which has a greater diameter as is visible in Figure 1. (Universal joint 36; see '926 patent, col. 3, lns. 47-49). From a more complete understanding of the Griffith reference, it is clear that claim 1, as amended herein, is neither anticipated nor rendered obvious by the Griffith '926 disclosure. Specifically, the differential drive according to Griffith '926 fails to disclose the following features:

- pre-assembled modules that are insertable into the drive housing;
- pre-assembled modules comprising a sideshaft gear, an outer joint part of a constant velocity joint and a rolling contact bearing; and
- outer bearing races of the angular contact rolling bearings having an inner diameter greater than the outer diameter of the outer joint parts, so as to be axially slipped over the outer joint parts.

and thus, cannot solve the objects of the present invention to provide a lightweight construction that is easy to assembly. Accordingly, the novelty and obviousness rejections, which all rely upon the Griffith reference, cannot be supported and should be withdrawn.

Applicants also traverse the rejections under 35 U.S.C. §103 and submit that a *prima facie* case of obviousness has not been established as it relates to claims 4 and 17. For at least the same reasons as set forth with respect to claim 1, the rejections under 35 U.S.C. §103 should be withdrawn with respect to claims 4 and 17.

Specifically, none of the references relied upon disclose a differential drive with the combination of claimed features and, particularly, wherein the outer bearing races of the angular contact roller bearings have an inner diameter greater than the outer diameter of the outer joint part, so as to be axially slipped over the outer joint parts. These inventive diameter relationships between the bearing and the outer joint part allow the outer race of the rolling contact bearing to be slipped over the outer joint part after connection of the sideshaft gears and the outer joint parts. Further, the outer bearing races permit an axial adjustment of the sideshaft gears on the differential carrier. These claimed features provide advantages in terms of a compact design and a constant speed transmission between the inner joint part and the outer joint part. Accordingly, Applicants submit that Griffith, either alone or in combination with Arnold or Szalony, fails to disclose or suggest the claimed diameter relationships between the outer bearing races and the outer joint parts as required by independent claim 1 and all of the claims which depend therefrom. In view of this, the obviousness rejections cannot be supported and should be withdrawn.

Having overcome all of the objections and rejections set forth in the Office Action, the Applicants submit that claims 1-4, 6, 8, 10, 12-15, and 17 are allowable. A Notice of Allowance indicating the same is therefore earnestly solicited. The Examiner is invited to telephone the Applicants' undersigned attorney at (248) 223-9500 if any unresolved matters remain.

Respectfully Submitted,

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4 Sheets-Sheet 1

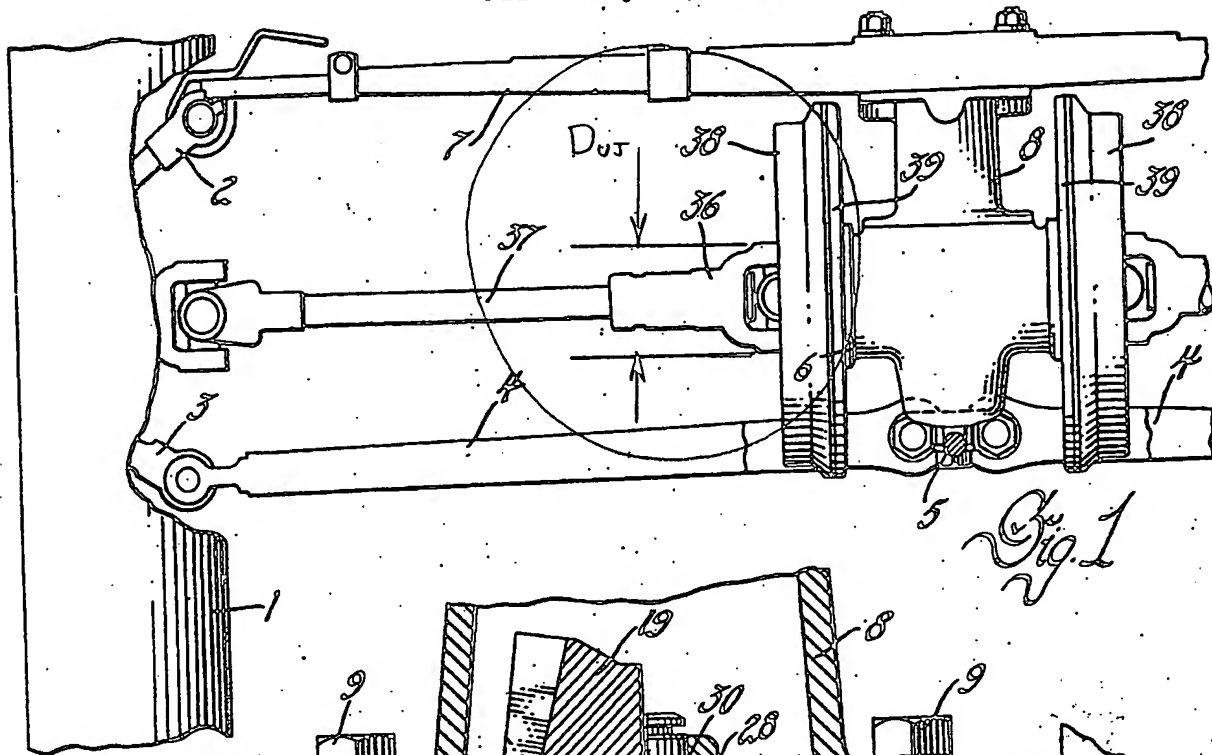


Fig. 1

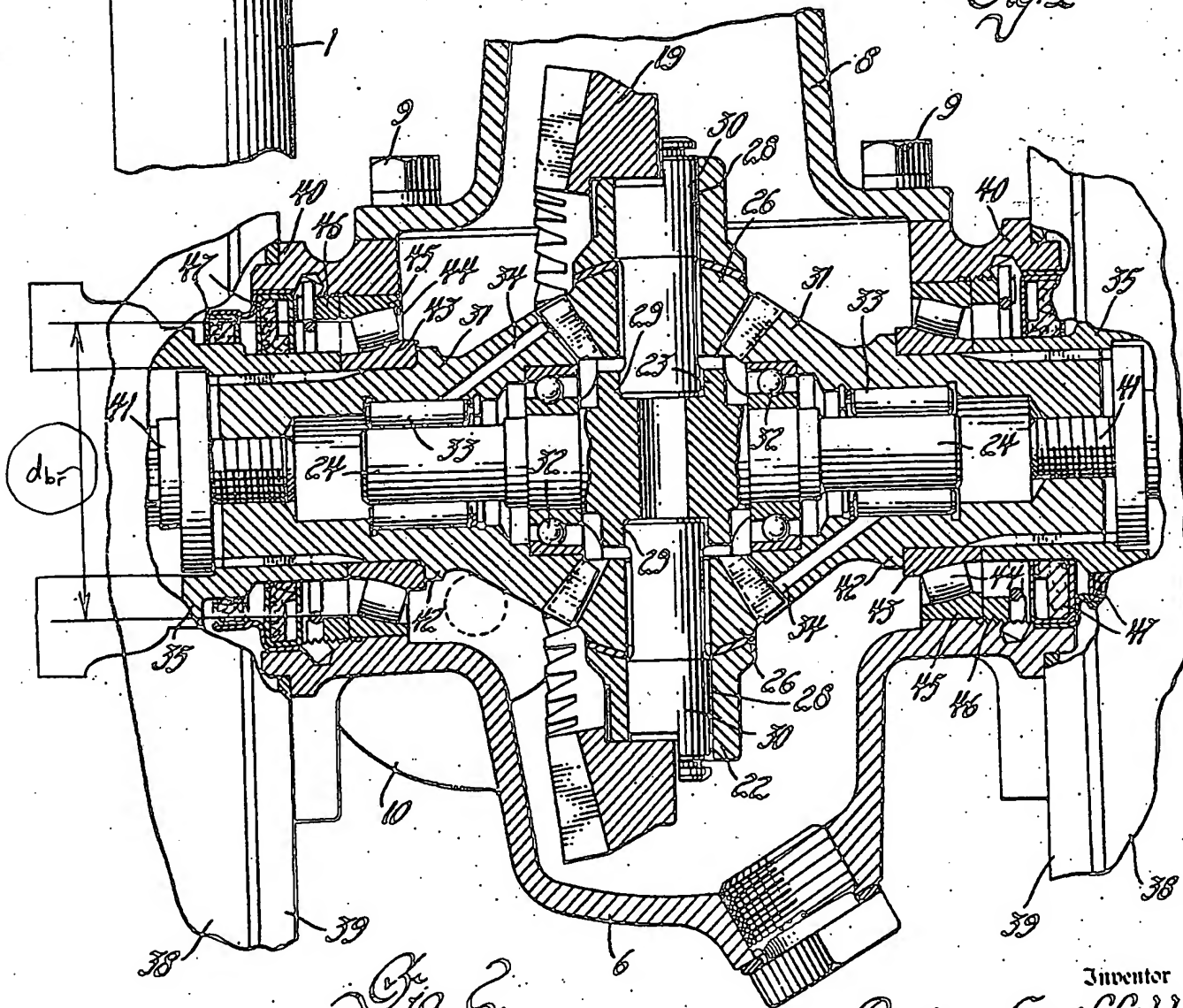


Fig. 2

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